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THE USE OF ACCELERATED METHODS OF LABORATORY
DIAGNOSIS OF DYSENTERY (PHAGE TITER INCREASE REACTION
AND THE METHOD OF FLUORESCENT ANTIBODIES)

E. N. Kulikova, et al

Army Biological Laboratories
Frederick, Maryland

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THE USE OF ACCELERATED METHODS OF LABORATORY
DIAGNOSIS OF DYSENTERY (PHAGE TITER INCREASE
REACTION AND THE METHOD OF FLUORESCENT ANTIBODIES)

Following is a translation of an article by
Ye. N. Kulikova, Ye. I. Vayman, Yu. T. Kuz'mina,
L. L. Blinova and A. D. Suvorkova in the Russian
language periodical Zhurnal mikrobiologii, epidemi-
ologii i immunobiologii (Journal of Microbiology,
Epidemiology and Immunobiology), Vol 34, No 6, 1963,
page 131.

(From the Kazan' Institute of Epidemiology, Microbiology
and Hygiene, Polyclinic No 2, Kazan')

A comparative study has been made of the accelerated
methods of laboratory diagnosis of dysentery -- phage titer
increase, fluorescent antibody method with parallel use of
the bacteriological method.

The specificity of indicator bacteriophages was tested
on 49 museum /stock/ and fresh cultures of the bacillus coli
family, and of luminescent sera on 122 such cultures. As a
control similar tests were run on typhoid fever patients and
individuals in whom dysentery bacteria were isolated (N'yuk-
kestl, Boyd-Novgorodskoy) and salmonellae. These studies
established the specificity of bacteriophages and luminescent
sera used in the investigation.

A total of 159 individuals were examined, 138 of whom
were patients with gastro-intestinal diseases, and 21 of whom
were included due to epidemic indications and for prophylactic
purposes. Dysenteric bacteriophages and luminescent sera of
Flexner and Sonne were used in the investigation (the 12
individuals in whom N'yukestl and Boyd-Novgorodskoy dysentery
cultures were isolated are not included).

The results showed that the phage titer increase reaction and the method of fluorescent antibodies are more sensitive than the bacteriological method and that the results are obtained within a shorter length of time.

The disadvantage of the phage titer increase reaction is that there is a considerable number of phage-resistant strains among the fresh cultures, as well as the complexity of running this test. Investigations have been conducted for the purpose of simplifying this reaction. The excretions from 255 patients were first divided into two parts: one part was examined by the usual method (with preliminary suspension and using a shüttel device /shaker?/) and the other was mixed with beads then inoculated. The results were the same in 90percent of the cases.

In order to adopt the phage titer increase reaction and the fluorescent antibody method in laboratory practise it is necessary that there be a centralized supply of standard stock luminescent sera and indicator bacteriophages.

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